LAWRENCE COUNTY, KENTUCKY

Lawrence County is south of the Huntington-Ashland Metropolitan Statistical Area (MSA) and is located to the south of Boyd County and to the southwest of Huntington, West Virginia. The Big Sandy River forms its eastern border.

EPA's June 29, 2004 proposal on appropriate designations for Kentucky included Lawrence County as nonattainment based on the following criteria:

- EPA indicates that Lawrence County has significant SO_x, and NO_x emissions from a power plant and its close proximity to the violating MSA monitors.

Emissions Data

Lawrence County, Kentucky, was not discussed in Kentucky's February recommendations. Based on the original guidance from U.S. EPA in April 2003, states were required to review possible emissions contributions for counties within an MSA boundary, if a monitor within the MSA was in violation of the $PM_{2.5}$ standard. Later, EPA suggested that states look outside the MSA boundaries if there was the possibility that emissions from a county outside the MSA were having a significant impact on monitors within the MSA. It is also important to note that EPA also used the 2001 NEI data which provided different data than the data EPA had recommended that states use. The 2001 NEI data, nor the methodology used in the calculations for that inventory have been made available to states for review.

However, in EPA's June 29, 2004, letters to states, EPA looked outside the original MSA boundaries to determine if large emissions contributions from adjacent areas were having an impact on $PM_{2.5}$ levels in many of the areas. Specifically, in the Huntington-Ashland metropolitan area, EPA has also recommended that Adams, Gallia, and Scioto Counties in Southeastern Ohio and Lawrence County, Kentucky, also be included as nonattainment areas due to the emissions of SO_x, NO_x, and PM.

Adams and Gallia Counties alone contribute 80% of all SO_x within the counties EPA has recommended as nonattainment for $PM_{2.5}$. By comparison, Lawrence County emits only 15% of SO_x emissions from the counties recommended by EPA as having the potential to impact the violating monitors. A similar comparison can be made with both NO_x and PM. Lawrence County's NO_x and PM emissions rank at 11% of the total EPA recommended areas. In a detailed review of EPA's recommended nonattainment areas, Lawrence County ranks consistently at less than or equal to 15% of combined emissions contributions within EPA's proposed nonattainment boundaries. See Figures 1-4 below.

Figure 1

Ashland Area SOx Emissions in EPA Proposed Nonattainment Counties

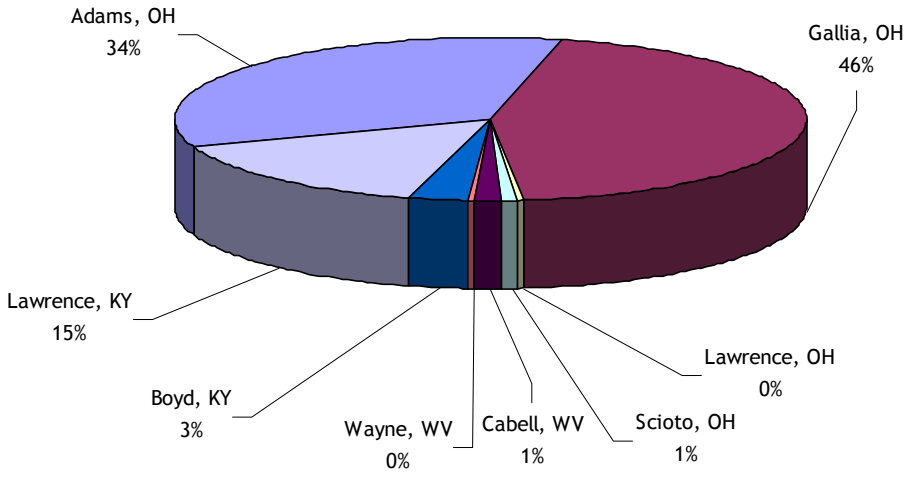


Figure 2

Ashland Area NOx Emissions in EPA Proposed Nonattainment Counties

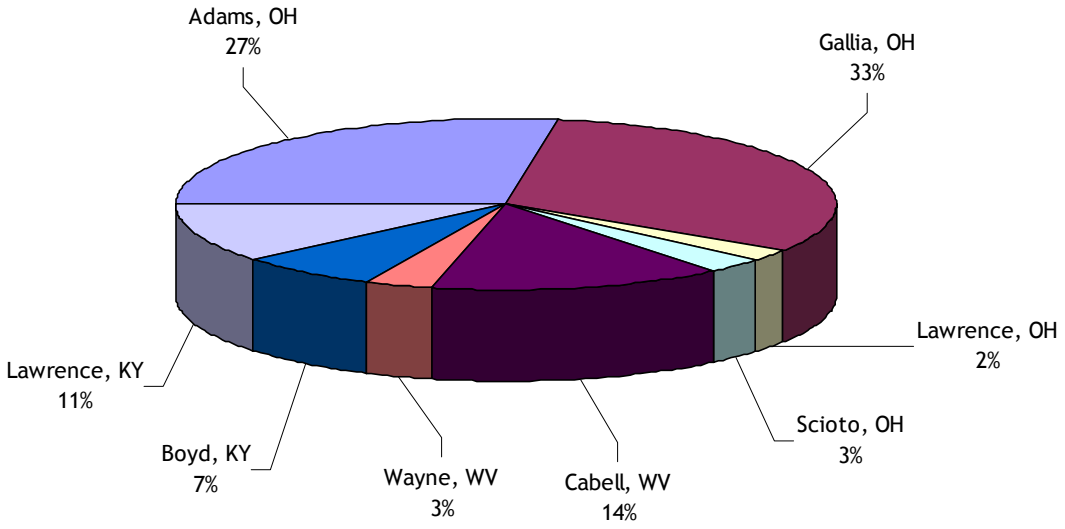


Figure 3

Ashland Area PM Emissions in EPA Proposed Nonattainment Counties

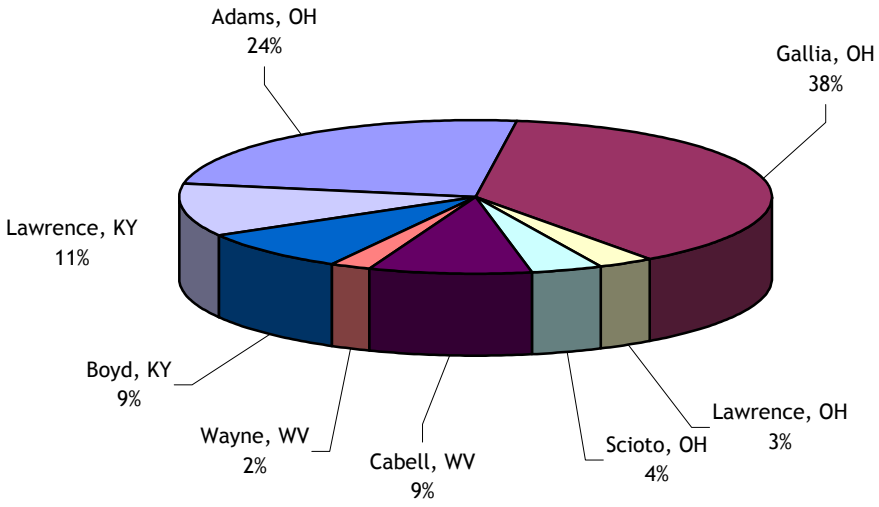
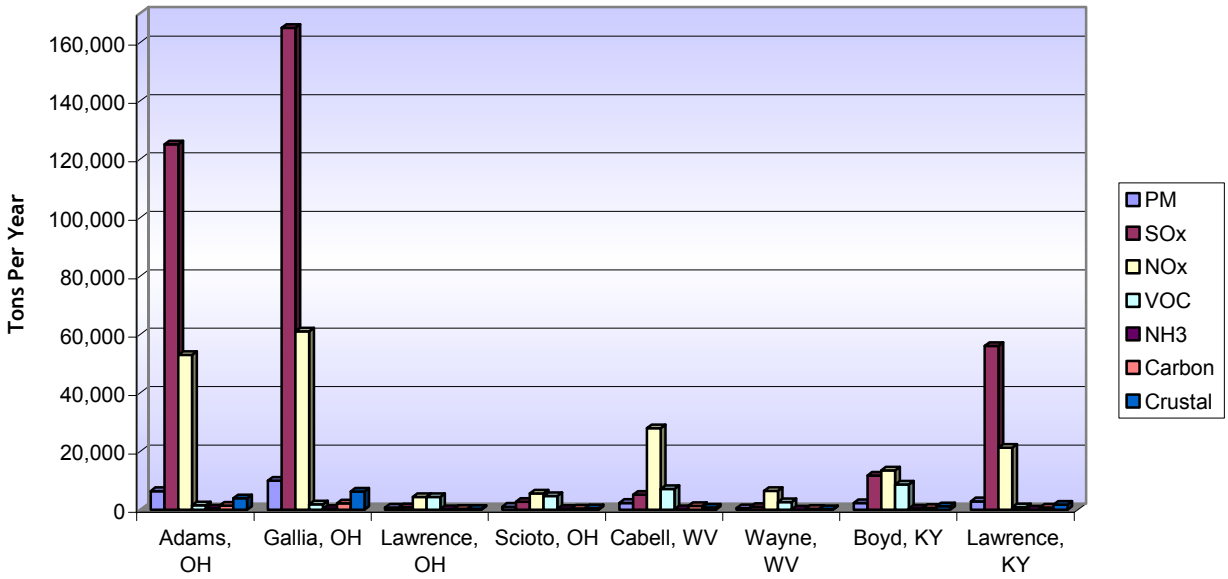


Figure 4

EPA Proposed Nonattainment Counties Emissions 2001



Additional Emission Reductions in Lawrence County, Kentucky

A factor not taken into account, either in the 1999 nor 2001 NEI data sets, was the implementation of NO_x controls at the Big Sandy Power Plant in Lawrence County. In 2003, NO_x emissions were dropped substantially by the installation of SCR on Unit #2 and over Fire Air Technology employed on Unit #1. The operation of these control technologies was responsible for 2,880 ton reduction in NO_x emissions during the summer ozone season, which includes the quarters where Kentucky typically records the highest $PM_{2.5}$ levels. The implementation of these controls at that facility even further reduces the potential emission contribution to monitors in question in Southeastern Ohio and West Virginia.

Additional Regional/National Controls

The implementation of new federal rules to decrease the amount of sulfur in both gasoline and diesel fuel will significantly decrease the amount of SO_2 in the entire area. Because of the Low Sulfur Diesel Rule, in 2007, new clean engines operating on 15-ppm sulfur diesel fuel will reduce NOx emissions by 50%, and reduce PM emissions by more than 90%. Due to the Tier 2 Vehicle and Gasoline Sulfur program, by 2006 average national gasoline sulfur levels will be 90% lower.

Upon implementation of the Clean Air Interstate Rule (CAIR) SO_2 emissions from power plants will be reduced nationwide by 3.6 million tons in 2010 (approximately 40 percent below current levels) and by another 2 million tons per year when the rules are fully implemented (approximately 70 percent below current levels). NO_x emissions would be cut by 1.5 million tons nationwide in 2010 and 1.8 million tons annually in 2015 (about 65 percent below today's levels).

The first phase of compliance under the CAIR rule to reduce both SO_2 and NO_x emissions would be required by 2010, allowing substantial emission reductions in the area, by the proposed attainment date for $PM_{2.5}$ nonattainment areas.

Monitoring Data and Trends

As can been seen in Figure 7 below, the speciation data from Kentucky's Ashland speciation monitor indicates that sulfate and organic carbon are the major components of the $PM_{2.5}$ values. In Figure 1 above and Figure 8 below, Lawrence County, Kentucky, contributes only 15% of the SO_2 in the area, and only 10% of the organic carbon in the area of EPA proposed nonattainment counties.

Figure 7

Ashland Speciation Data 12/9/01 - 12/11/03
Average Concentration (µg/m³)

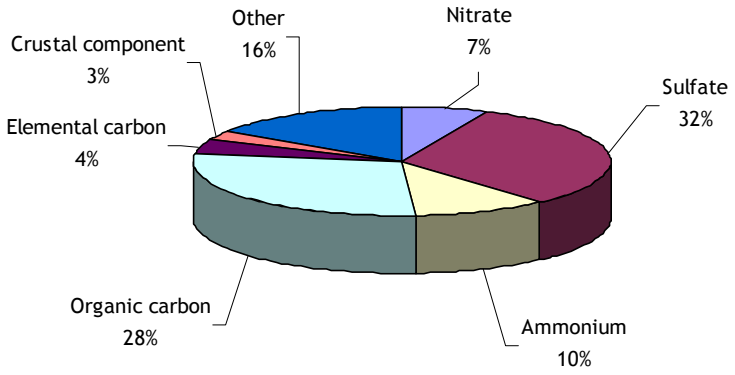
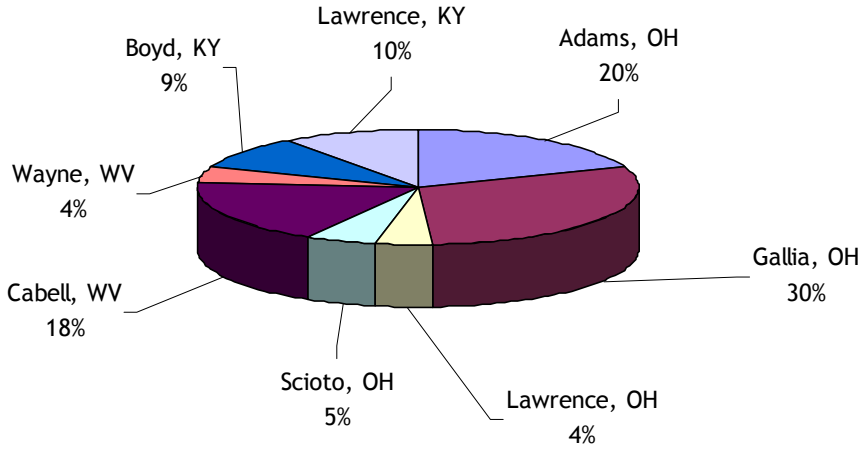


Figure 8

Ashland Area Carbon Emissions in EPA Proposed Nonattainment Counties

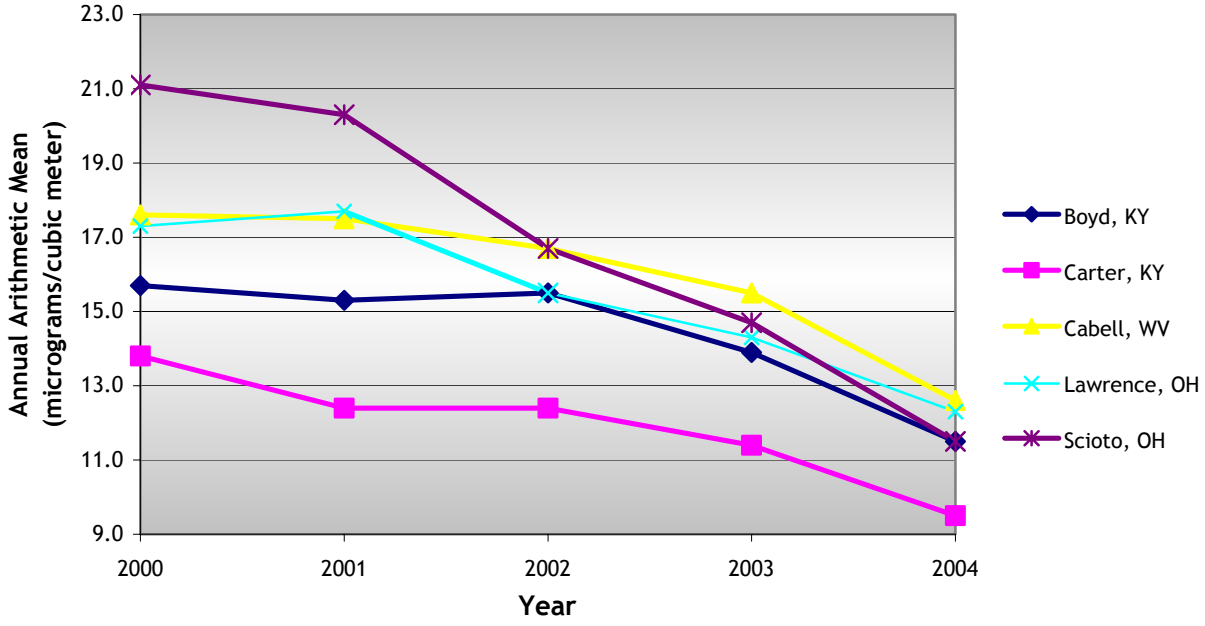


As EPA notes in its June 29, 2004 letter, the monitor located in Boyd County shows attainment with the $PM_{2.5}$ standard, with a 2001-2003 design value of 14.9 $\mu g/m^3$. In addition to showing attainment with the standard, the annual

concentrations continue to show a downward trend as depicted in Figure 9 below, which utilized data from the year 2000 through April 2004.

Figure 9

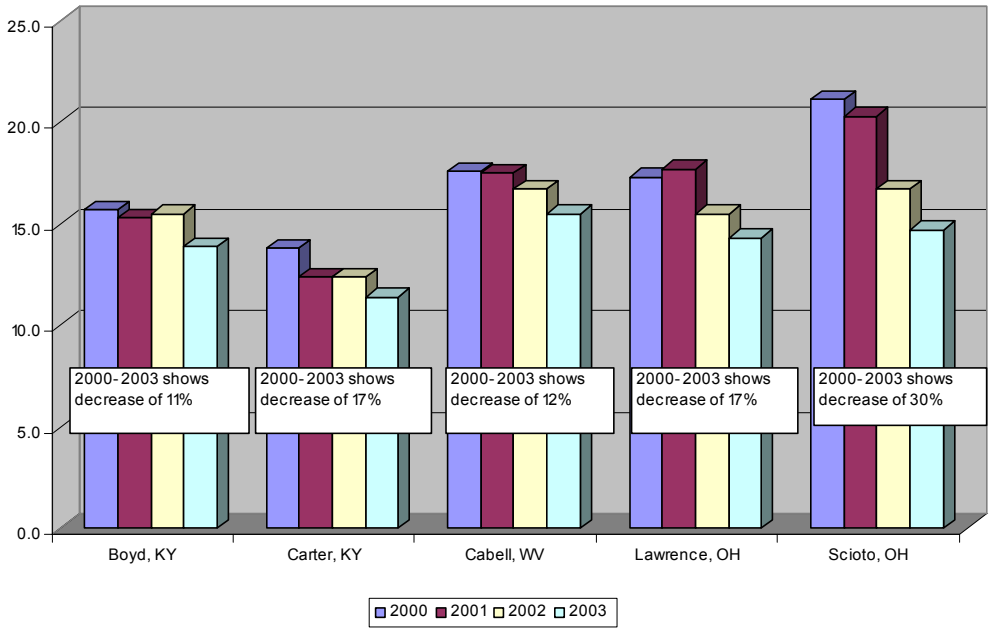
Ashland Area PM 2.5 Trend Utilizing Most Current Available Data



Lawrence County does not have a monitor, however, the $PM_{2.5}$ levels throughout the entire region have been steadily decreasing over the last four years. Monitored levels have decreased by 11% in Boyd County, 17% in Carter County, 12% in Cabell County, WV, 17% in Lawrence County, OH, and 30% in Scioto County, OH (See Figure 10 below).

Figure 10

Decline in PM Values for Ashland Area



Conclusions

Based on the factors discussed above, Kentucky believes that Lawrence County, Kentucky should be designated attainment for the $PM_{2.5}$ standard.

- Kentucky believes that EPA's use of the weighted emissions scoring approach was skewed. EPA did not include adjacent county emissions in the total emissions being analyzed for the area. If the emissions from the entire area under review were used, vs just those within the MSA, a very different result in the weighted emissions scores would have occurred. Lawrence County would not have the potential to significantly contribute to $PM_{2.5}$ levels within the region.

- $PM_{2.5}$ levels continue to decline throughout the entire region. From a review of all monitors in the region, an average 17% decline in $PM_{2.5}$ levels has occurred from 2000 through 2003. Every monitor in the region is currently showing values well within attainment of the annual $PM_{2.5}$ standard using 2002 through 2004 data.

- Substantial NO_x emission reductions have already occurred from the installation of controls at the Big Sandy Power Plant in Lawrence County.

- Additional emission reductions on a national and regional level will provide substantial benefits in the region. The anticipated sulfur reductions due to the Low Sulfur Diesel Rule, the Tier 2 Vehicle and Gasoline Sulfur programs, and the Clean Air Interstate Rule (CAIR) will further lower pollutant levels within this region.

To have this county designated nonattainment would invoke additional, substantial, and unnecessary requirements on local government planning agencies. Substantial local NO_x emission reductions from Lawrence County have already occurred. Drastic emission reductions are scheduled to occur in the mobile sector throughout the next several years that will greatly impact pollutant levels in the area. In addition reductions anticipated by the CAIR provisions, and the air monitoring data demonstrating attainment of the $PM_{2.5}$ Standard, lead to the conclusion that Lawrence County, Kentucky, should be designated attainment for the $PM_{2.5}$ Standard.